

Application Serial No. 08/08,849

Attorney Docket No. CIC-037-US

A¹ cont

approximately at the radius of curvature of a concave projection screen 312. The image source [310] 310' produces a fine scanning beam which is modulated in intensity as it scans to form an intermediate image 314 on screen 312. Screen 312 scatters the energy from the image source [310] 310' to fill the entrance [aperture] pupil of a re-imaging lens 316 which in turn forms a distant virtual image 318 of the intermediate image.

Replace the paragraph beginning on page 8, line 7 with the following:

sl. by

A²

In accordance with the present invention, the image source [310] 310' comprises any means of forming a fine scanning spot on the projection screen 312 to form the intermediate image 314, including, but not limited to, a monochromatic or polychromatic scanning laser projector. The projection screen 312 comprises any suitable material or device to scatter the light from the intermediate image 314 into the entrance [aperture] pupil of the re-imaging lens 316. Preferably, such scattering will be confined such that all the light from the intermediate image [310] 314 enters and uniformly fills the entrance [aperture] pupil of the lens 316. Note that such a screen material or device may further comprise a surface which not only scatters the energy from the image source [310] 310' but also which may absorb the light and re-emit it as the intermediate image 314. Note further that if the image source is such that polychromatic light is produced wherein each color can be scanned to form a full-color composite intermediate image 314, then each color component intermediate image should be scanned to pre-aberrate the intermediate image to accommodate lateral chromatic aberration in the re-imaging lens 316. Note finally that the unique combination of independence between the beam size and the re-imaging lens aperture and the narrow beam size allows the projector to be located off-axis as shown in FIG. 4, providing that the intermediate image formed by the projector is created as an off-axis image. This advantage is made possible by the very long relative depth of focus of the intermediate image.

In the Claims:

Please rewrite claims 3, 6, 31, 32, 42, 43, 47, 53-56 as follows:

- A³*
3. (once amended) The system of claim 2 wherein said concave mirror further comprises a Fresnel structure formed on [the] a mirror surface of said concave mirror.

Application Serial No. 09/78,849

Attorney Docket No. CIC-037-US

- A⁴
6. (once amended) The system of claim 1 further comprising a beam splitter positioned between said object imaging means and [said] a reflective surface of said reflective medium for imaging the intermediate image reflected by said reflective medium to said re-imaging means.

31. (once amended) An optical system, comprising:

- A⁵
- a. an imaging means for forming an intermediate image, wherein said imaging means produces at least one first aberration in said intermediate image;
 - b. a curved surface proximate to said intermediate image comprising a light redistributing means for expanding a cone of light incident on said surface into a larger cone of exodus, whereby said curved surface reverses at least one said first aberration; and
 - c. a re-imaging means for re-imaging said intermediate image, wherein said re-imaging means intercepts a substantial portion of light from said curved surface, wherein said re-imaging means produces at least one second aberration similar to said at least one first aberration, thereby thereby canceling or reducing said at least one first aberration reversed by said curved surface.

Sub C1

32. (once amended) An optical system, comprising:

- a. a modulated scanning beam of light for forming an intermediate image;
- b. a light redistributing means positioned proximate to said intermediate image for expanding a cone of light incident on said light redistributing means into a larger cone of exodus; and
- c. a re-imaging means for re-imaging said intermediate image, wherein said re-imaging means forms an exit pupil.

- A⁶
42. (once amended) An optical system as recited in claim 32, wherein said intermediate image comprises at least one aberration, and at least one said at least one aberration is substantially canceled by said means for re-imaging.

43. (once amended) An optical system as recited in claim 33, wherein said intermediate image comprises at least one aberration, and at least one said at least one aberration is substantially canceled by said means for re-imaging.

Application Serial No. 09/78,849

Attorney Docket No. CIC-037-US

47. (once amended) An optical system, comprising:

- A1
47 = 15/10
- a. an imaging means for forming an intermediate image, wherein said imaging means produces at least one first aberration in said intermediate image;
 - b. a means for reversing at least one said first aberration in said intermediate image, wherein said means for reversing at least one said first aberration comprises a convergent reflective medium; and
 - c. a re-imaging means for re-imaging said intermediate image reflected by said convergent reflective medium, wherein said re-imaging means produces at least one second aberration similar to said at least one first aberration, thereby canceling or reducing said at least one first aberration reversed by said reversing means in said re-imaged intermediate image.

53. (once amended) A method of generating an image, comprising:

- A8
- a. forming an intermediate image, wherein said intermediate image is characterized by at least one first aberration;
 - b. reversing a sign of said at least one first aberration in said intermediate image with a convergent reflective element; and
 - c. forming an image from said intermediate image with a re-imaging means, wherein said re-imaging means is characterized by at least one second aberration that is at least similar to said at least one first aberration.

54. (once amended) A method of generating an image as recited in claim 53, wherein said intermediate image is formed with an imaging means comprising at least one positive optical element, said re-imaging means comprises at least one positive optical element, and said convergent reflective element produces negative aberration contributions that compensate at least one aberration contribution from said positive optical elements of said imaging means and said re-imaging means.

55. (once amended) A method of generating an image as recited in claim 53, wherein said convergent reflective element comprises an element selected from the group consisting of a convergent mirror and a convergent Fresnel reflector.

56. (once amended) A method of generating an image as recited in claim 53, wherein said intermediate image is formed proximate to said convergent reflective element.